

Application No. 09/910,592
Amendment dated November 12, 2003
Reply to Office Action of June 11, 2003

AMENDMENT TO THE SPECIFICATION

Kindly amend the specification as follows:

On the top of page 1, please delete the following title:

**"METHOD FOR AB INITIO DETERMINATION OF
MACROMOLECULAR CRYSTALLOGRAPHIC PHASES AT MODERATE
RESOLUTION BY A SYMMETRY-ENFORCED ORTHOGONAL
MULTICENTER SPHERICAL HARMONIC-SPHERICAL BESSEL
EXPANSION"**

Please replace the deleted text with the following title:

**--METHOD OF THREE-DIMENSIONAL MOLECULAR STRUCTURE
DETERMINATION EMPLOYING SYMMETRY-ENFORCED ORTHOGONAL
MULTICENTER SPHERICAL HARMONIC - SPHERICAL BESSEL
EXPANSION--.**

On page 3, below the heading "BRIEF DESCRIPTION OF THE DRAWINGS", please delete the following paragraphs:

"FIG. 1 shows a first protein crystal packing function histogram utilizing the method of the invention and based on providing the number of possible configurations for a given protein or other molecule of interest with a resolution in Angstroms.

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FIG. 2 shows a second protein crystal packing function histogram utilizing the method of the invention and based on providing the number of possible configurations for a given protein or other molecule of interest with a resolution in Angstroms.

FIG. 3 shows a flow chart for the calculation routine of the current invention used to resolve the unphased diffraction amplitudes of the SHSB representations of the current invention.

FIG. 4 shows a space filling schematic for a mathematical representation of the orthorhombic space group of the invention.

FIG. 5 shows a flow chart for the calculation routine of the current invention used to resolve the unphased diffraction amplitudes of the SHSB representations into a Fourier representation of the model crystal of the molecule of interest utilizing a fractionalization matrix.

FIG. 6 shows a representation of an Expanded Direct Space Basis Function of the invention.

FIG. 7 shows a representation of a Component Direct Space Basis Function of the invention and the Component Fourier Transformations following therefrom."

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-- FIG. 1 shows a histogram of the number of protein crystal forms of a first protein monomer at a given distance from the average coordinate as solutions of the packing function of this invention.

FIG. 2 shows a histogram of the number of protein crystal forms of a second protein monomer at a given distance from the average coordinate as solutions of the packing function of this invention.

FIG. 3 shows a flow chart for the calculation routine of the current invention used to resolve the unphased diffraction amplitudes of the SHSB representations of the current invention.

FIG. 4 shows a space filling schematic for a mathematical representation of the orthorhombic space group of the current invention.

FIG. 5 shows a flow chart for the calculation routine of the current invention used to resolve the unphased diffraction amplitudes of the SHSB representations into a Fourier representation of the model crystal of the molecule of interest utilizing a fractionalization matrix.

FIG. 6 shows a representation of an Expanded Direct Space Basis Function of the current invention.

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FIG. 7 shows a representation of a Component Direct Space Basis Function of the current invention and the Component Fourier Transformations following therefrom. --.

On page 6, third full paragraph, delete "Diagram xxx.".

On page 9, line 10 of the first full paragraph, delete "(Fig. xxx)" and substitute therefor -- (Fig. 2) -
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On page 15, line 3 of the first full paragraph, delete "(xxx)".

On page 18, line 3, delete "(Fix.XXX)".

On page 34, line 12, insert the following:

-- The methods of the present invention may be carried out using a computer, which comprises a working memory for storing instructions for processing machine-readable data, a central-processing unit coupled to the working memory and to said machine-readable data storage medium for performing the steps of the methods herein described and processing said machine-readable data into a three-dimensional representation, or an output hardware for displaying the results of steps of said methods or the three-dimensional representation. Such a computer may comprise a display. Alternatively, such a computer comprises the above working memory, central processing unit, and display. More preferably, such a computer comprises

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a monitor. In an alternative embodiment, such a computer comprises a floppy disk. More preferably, such a computer comprises a second hard drive. --.